

Getting Started Guide

hp StorageWorks Command View EVA

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Fourth Edition (September 2004)

Part Number: T3268-88003

This getting started guide explains how to set up HP StorageWorks Command View EVA for configuring, managing, and monitoring your HP StorageWorks Enterprise Virtual Array storage system.



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Command View EVA Getting Started Guide
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about this guide

This getting started guide provides information to help you:

- Install Command View EVA on a Storage Management Appliance
- Launch Command View EVA on a Storage Management Appliance
- Set up Command View EVA
- Initialize an Enterprise storage system

“About this Guide” topics include:

- [Overview](#), page 8
- [Conventions](#), page 9
- [Getting help](#), page 11

Overview

This section covers the following topics:

- [Intended audience](#)
- [Related documentation](#)

Intended audience

This book is intended for use by those who are experienced with the following:

- Enterprise Virtual Array
- Storage systems

Related documentation

In addition to this guide, HP provides corresponding information:

- *HP StorageWorks Command View EVA Release Notes*
- *HP StorageWorks Command View EVA Windows Server 2003 Installation and Configuration Guide*
- *HP StorageWorks Command View EVA Storage System Scripting Utility Reference Guide*
- *HP StorageWorks Command View EVA Updating Product Software*
- *HP OpenView Storage Operations Manager Overview*
- Command View EVA online Help, part of the Command View EVA software

Conventions

Conventions consist of the following:

- Document conventions
- Text symbols
- Equipment symbols

Document conventions

This document follows the conventions in [Table 1](#).

Table 1: Document conventions

Convention	Element
Blue text: Figure 1	Cross-reference links
Bold	Menu items, buttons, and key, tab, and box names
<i>Italics</i>	Text emphasis and document titles in body text
Monospace font	User input, commands, code, file and directory names, and system responses (output and messages)
<i>Monospace, italic font</i>	Command-line and code variables
Blue underlined sans serif font text (http://www.hp.com)	Web site addresses

Text symbols

The following symbols may be found in the text of this guide. They have the following meanings:



Caution: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

Tip: Text in a tip provides additional help to readers by providing nonessential or optional techniques, procedures, or shortcuts.

Note: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Equipment symbols

The following equipment symbols may be found on hardware for which this guide pertains. They have the following meanings:



Any enclosed surface or area of the equipment marked with these symbols indicates the presence of electrical shock hazards. Enclosed area contains no operator serviceable parts.

WARNING: To reduce the risk of personal injury from electrical shock hazards, do not open this enclosure.



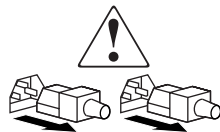
Any RJ-45 receptacle marked with these symbols indicates a network interface connection.

WARNING: To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



Any surface or area of the equipment marked with these symbols indicates the presence of a hot surface or hot component. Contact with this surface could result in injury.

WARNING: To reduce the risk of personal injury from a hot component, allow the surface to cool before touching.



Power supplies or systems marked with these symbols indicate the presence of multiple sources of power.

WARNING: To reduce the risk of personal injury from electrical shock, remove all power cords to completely disconnect power from the power supplies and systems.



Any product or assembly marked with these symbols indicates that the component exceeds the recommended weight for one individual to handle safely.

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manually handling material.

Getting help

If you still have a question after reading this guide, contact an HP authorized service provider or access our web site: <http://www.hp.com>.

HP technical support

Telephone numbers for worldwide technical support are listed on the following HP web site: <http://www.hp.com/support/>. From this web site, select the country of origin.

Note: For continuous quality improvement, calls may be recorded or monitored.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

HP storage web site

The HP web site has the latest information on this product, as well as the latest drivers. Access storage at: <http://www.hp.com/country/us/eng/prodserv/storage.html>. From this web site, select the appropriate product or solution.

HP authorized reseller

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518
- In Canada, call 1-800-263-5868
- Elsewhere, see the HP web site for locations and telephone numbers: <http://www.hp.com>.

Introduction

1

Command View EVA is the user interface through which you configure, manage, and monitor the Enterprise Virtual Array (EVA) storage system (referred to as the “storage system” throughout this guide).

Command View EVA is installed on an HP OpenView Storage Management Appliance or on a server running Windows Server 2003. It can be installed on more than one appliance or server in a fabric but only one appliance or server can actively manage a storage system at a time. Command View EVA is accessed by a Web browser.

For more information:

- About the Storage Management Appliance, refer to the *HP OpenView Storage Management Appliance Configuration Guide* located under **Technical documentation** at <http://h18000.www1.hp.com/products/sanworks/managementappliance/index.html>.
- About Command View EVA on a Windows server 2003, refer to the *HP StorageWorks Command View EVA Windows Server 2003 Installation and Configuration Guide*, located on the HP Storage Works Command View EVA documentation CD and under **Technical documents** at: <http://h18000.www1.hp.com/products/storage/software/som/index.html>.

Figure 1 shows an example of Command View EVA in an Enterprise Virtual Array storage system environment.

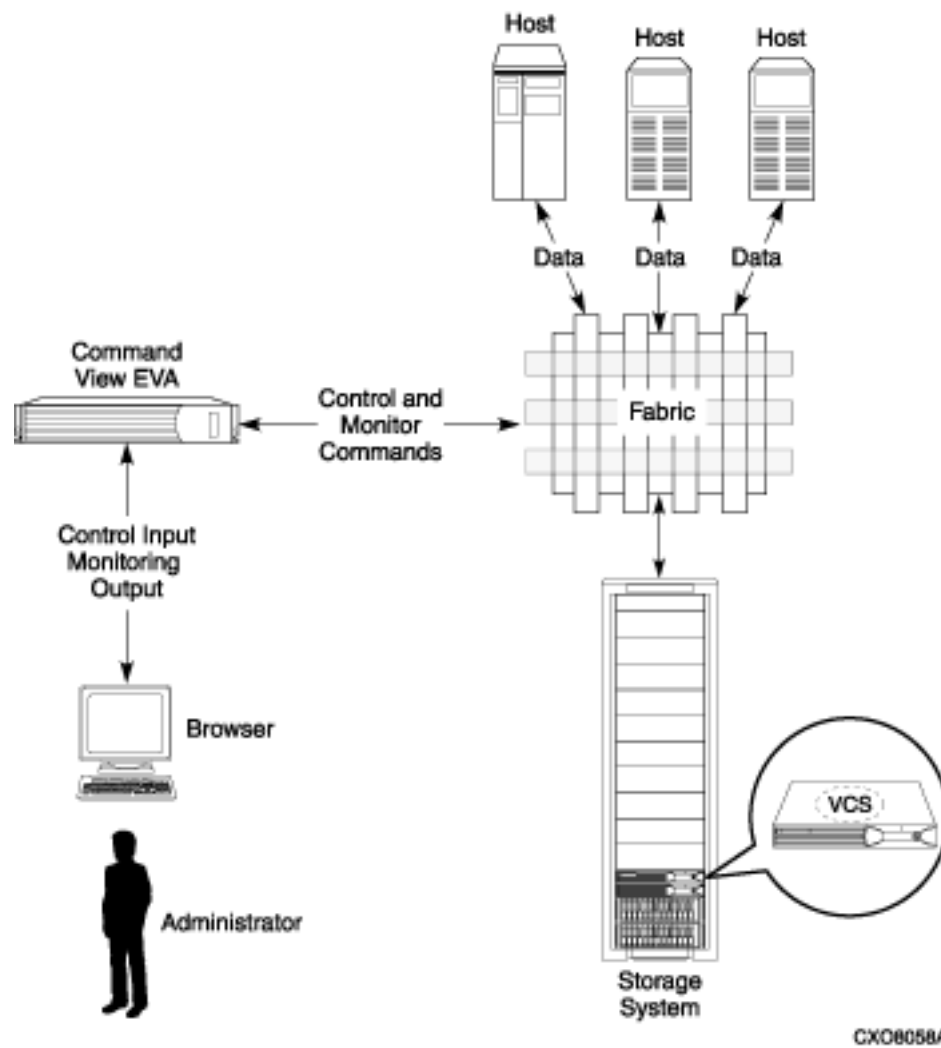


Figure 1: Enterprise Virtual Array storage system example

Features and Capabilities

Command View EVA interfaces with the storage system and is used to perform storage management tasks, including:

- Creating virtual disk families, including selection of VRAID level, cache policy, and host presentation.
- Managing system hardware located in the racks.
- Creating snapclones and snapshots of virtual disks.
- Viewing event information.
- Creating data replication groups

An online help system is available within the Command View EVA interface, including page-level help.

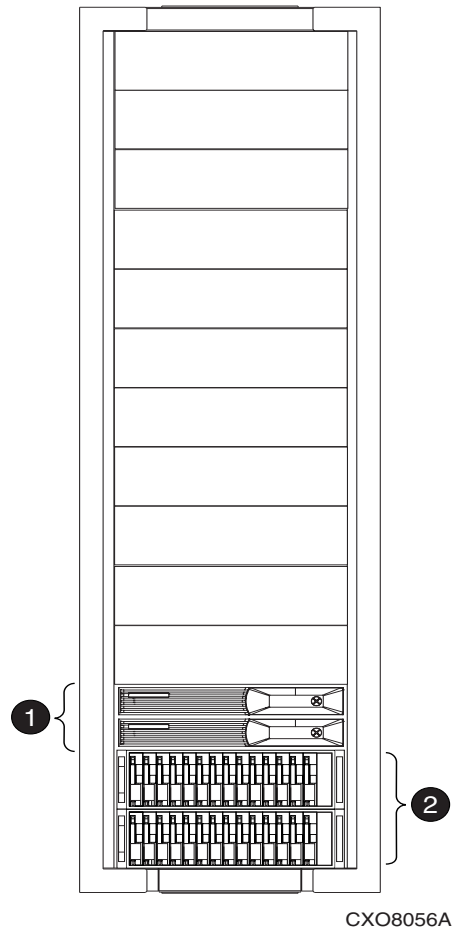
Enterprise Virtual Array Storage System

The storage system contains three main components:

- Command View EVA—the user interface that communicates with the HSV controllers that control and monitor EVA storage systems.
- Virtual Controller Software (VCS)—the controller-based software that allows the storage system to communicate with Command View EVA.
- Hardware—the physical pieces that constitute the storage system, such as controllers, drives, enclosures, and cabling. These pieces are combined in a rack and are connected to the SAN.

These components work together to create an entire storage system solution.

The Enterprise Virtual Array storage system hardware consists of a pair of HSV controllers and the disk drives and drive enclosures they manage (see [Figure 2](#)).



- ❶ Controller pair
- ❷ FC drive enclosures

Figure 2: Basic storage system hardware components

Virtualization

Virtualization technology simplifies the creation, presentation, and administration of storage to multivendor host servers in a SAN. Virtualization streamlines the work required to manage and implement the storage environment.

The storage administrator no longer needs to make decisions about planning, creating, and configuring stripesets, mirrorsets, and RAID sets. The software now automates these decisions. The decisions are simplified to basic choices of virtual disk capacity and redundancy levels. All of this work is done from Command View EVA.

The Enterprise storage system uses virtualization technology to organize physical disks into disk groups (see [Figure 3](#)). A disk group is the set of physical disk drives within which virtual disks can be created. The controller presents the virtual disk as a logical unit number (LUN) to a host for application use. These virtual disks are created using the capacity of all drives in a disk group.

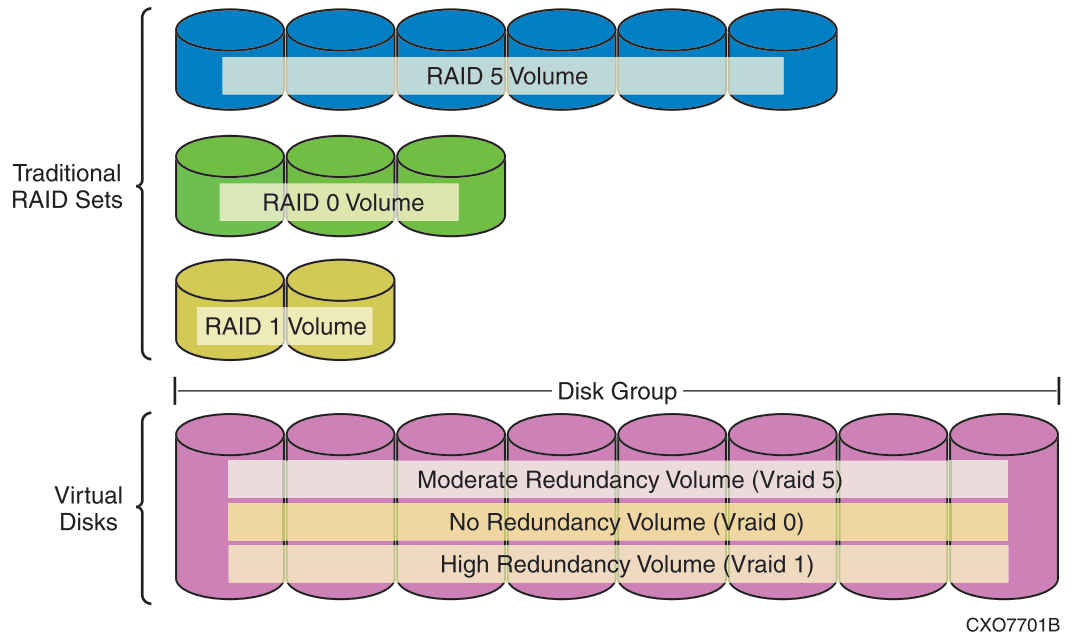


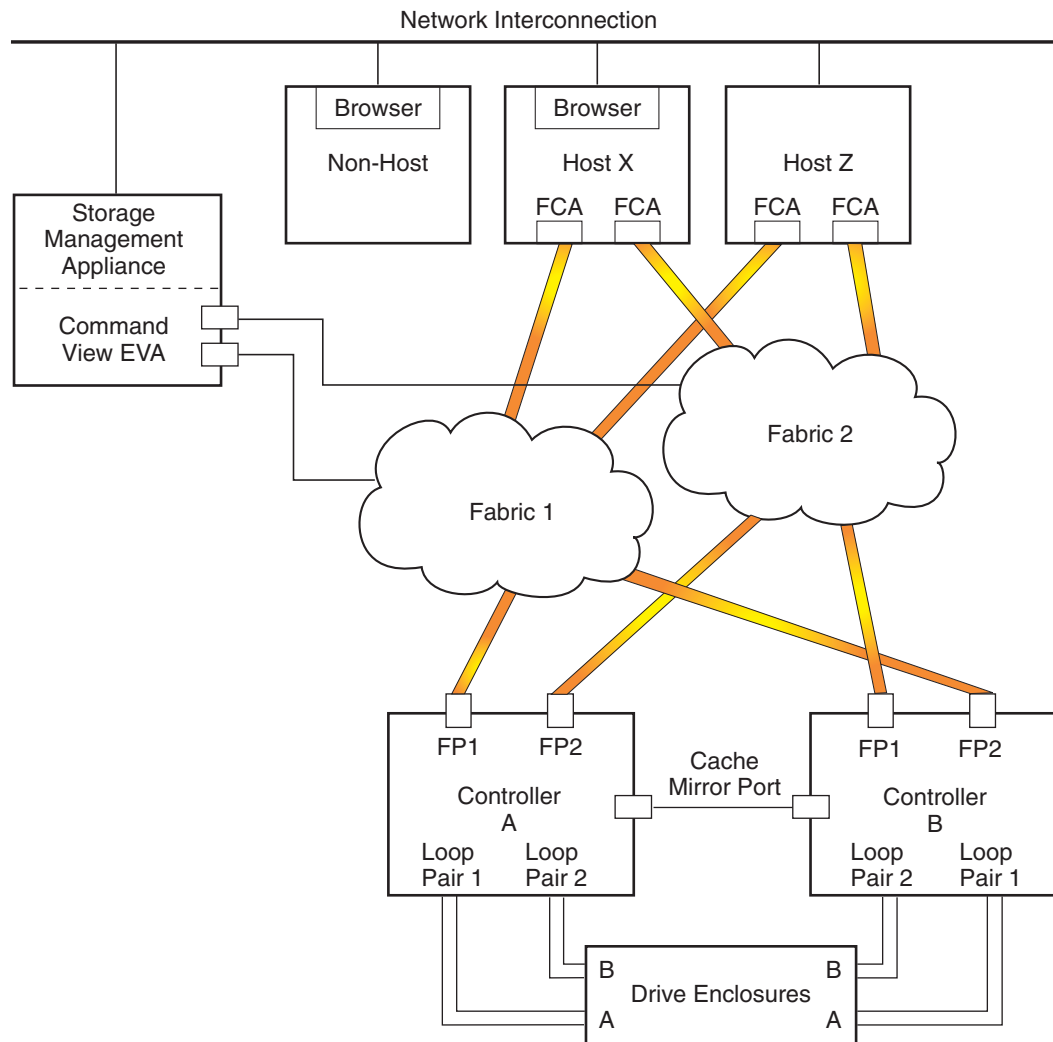
Figure 3: Traditional RAID versus Enterprise Virtual Array virtualization

Storage System Operation

Figure 4 shows a block diagram of an entire network storage system where:

- The controller pair connects to the two Fibre Channel fabrics to which the hosts connect.
- Command View EVA also connects to the fabric, through the Storage Management Appliance or a supported HBA on a management server.
- The controller pair connects to the physical disk enclosures, which contain disk drives, through fiber channel cables that constitute arbitrated loop pairs. A loop pair consists of two loops, each running independently. Each loop, however, can take over for the other, in case of failure.

Note: For more information, refer to the *HP StorageWorks Enterprise Virtual Array User Guide* included with the Enterprise Virtual Array.



FP = Fibre (Host) Port
FCA = Fibre Channel Adapter

CXO8099B

Figure 4: Block diagram of the storage system connections

Getting Started with Command View EVA

2

This guide is meant to help you install and launch Command View EVA and to make initial settings that will allow you to configure, manage, and monitor your Enterprise Virtual Array. It is not meant to be a comprehensive guide to all Command View EVA features and capabilities. An extensive online Help system, within the Command View EVA application, provides detailed information on each feature and functionality in the software. It also provides step-by-step procedures for configuration and management actions available to you. Refer to the online Help for details of capabilities not included in this guide.

Command View EVA is accessed by browsing to the Storage Management Appliance or management server and logging in to the HP OpenView Storage Management Appliance Software **Device** page using a supported Internet browser. The *HP StorageWorks Command View EVA Release Notes* lists supported browsers and browser versions.

Note: Information on setting up and accessing a Storage Management Appliance is provided in the documentation shipped with the appliance and is located at:

<http://h18006.www1.hp.com/products/sanworks/managementappliance/index.html>.

Information on setting up and accessing a Windows-based management server is provided in the *HP StorageWorks Command View EVA Windows Server 2003 Installation and Configuration Guide*, which is located on the product CD and at:

<http://h18000.www1.hp.com/products/storage/software/som/index.html>.

This chapter contains information and instructions on the following:

- [Prerequisites for Installation of Command View EVA](#), page 20
- [Installing Command View EVA on a Storage Management Appliance](#), page 21
- [Launching Command View EVA](#), page 22
- [Setting Command View EVA Options](#), page 26
- [Initializing the Storage System](#), page 41
- [Using Storage System Initialization Advanced Options](#), page 43

After completing these items, you can configure, manage, and monitor your Enterprise Virtual Array with Command View EVA.

Prerequisites for Installation of Command View EVA

The following hardware and software prerequisites must be met to ensure proper installation of Command View EVA on a Storage Management Appliance:

- Hardware requirements
 - EVA3000 and/or EVA5000 storage array systems
 - HP OpenView Storage Management Appliance I, II, or III
- Software requirements
 - Storage Management Appliance software v2.1, installed on the storage management appliance
 - Virtual Controller Software (VCS) v2.006 or later, installed on the storage array controllers

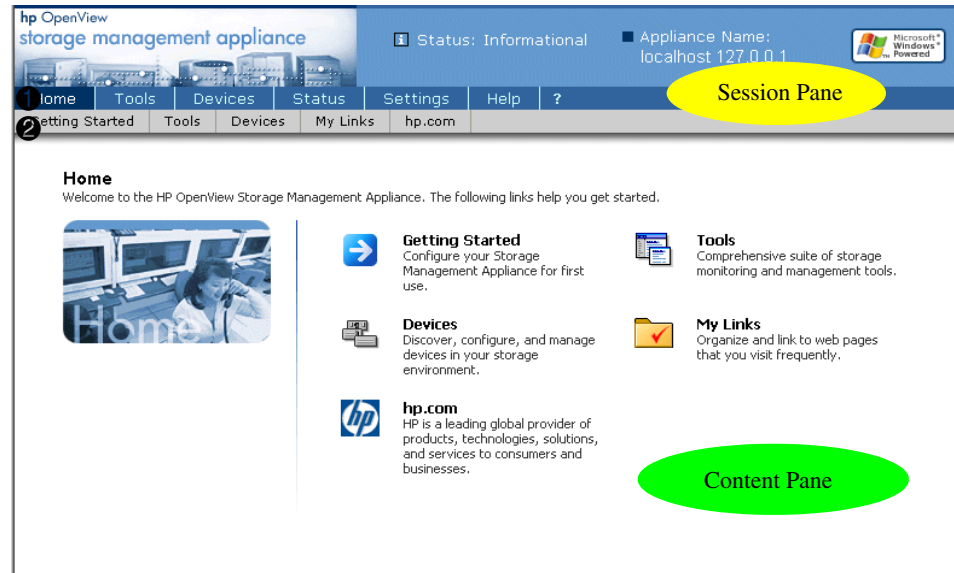
Note: Command View EVA data replication features and functionality are not accessible from VCS v2.006.

For hardware and software requirements to install Command View EVA on a Windows-based server, refer to the *HP StorageWorks Command View EVA Windows Server 2003 Installation and Configuration Guide*.

Note: Refer to *HP StorageWorks Command View EVA Release Notes* for the latest requirements before installing Command View EVA.

Installing Command View EVA on a Storage Management Appliance

Command View EVA is installed on the Storage Management Appliance and launched from the **Devices** link on the Storage Management Appliance Software **Home** page (see [Figure 5](#)). The **Home** page is displayed when you log in to the Storage Management Appliance.



- ① Primary navigation bar
- ② Secondary navigation bar

Figure 5: HP OpenView Storage Management Appliance Software Home page

Note: To install and launch Command View EVA on a Windows server, see the *HP StorageWorks Command View EVA Windows Server 2003 Installation and Configuration Guide*.

Install Command View EVA on the Storage Management Appliance as follows:

1. Insert the Command View EVA CD-ROM into the CD-ROM drive on the Storage Management Appliance.
2. Click **Install Software**.
The Installation Wizard starts.
3. Click **Next** at the bottom of the wizard page.
4. Select **CD-ROM Drive on the Storage Management Appliance** and click **Next**.
5. Verify that the appliance name and IP address are correct, and click **Next**.
6. Select **Command View EVA V3.3** from the drop-down list. Click **Next**.

Installation begins and a status bar indicates progress. When the installation is complete, the wizard displays the message *Installation is complete*.

7. Click **Finish**.

The management appliance returns to the Maintenance page.

Continue to [Launching Command View EVA](#) and verify the installation.

Launching Command View EVA

Launch Command View EVA from the HP OpenView Storage Management Appliance **Home** page (see [Figure 5](#)) using the following steps:

1. Click **Devices** on the primary navigation bar, secondary navigation bar, or in the **Content** pane. The **Devices** page displays in the **Content** pane (see [Figure 6](#)).



Figure 6: Devices page

2. Click **command view eva** on the secondary navigation bar or in the **Content** pane. The **Command View EVA user interface** displays (see [Figure 7](#)).
3. If you are launching Command View EVA for the first time after installing it, verify that the installation succeeded as follows:
 - a. Click **Help** in the Session pane.
 - b. Click **About** in the Help tool bar
 - c. Confirm that the correct version of Command View EVA is displayed on the About page.

Command View EVA Interface Organization

The Command View EVA user interface is divided into three panes (see [Figure 7](#))

- Session pane
- Navigation pane
- Content pane

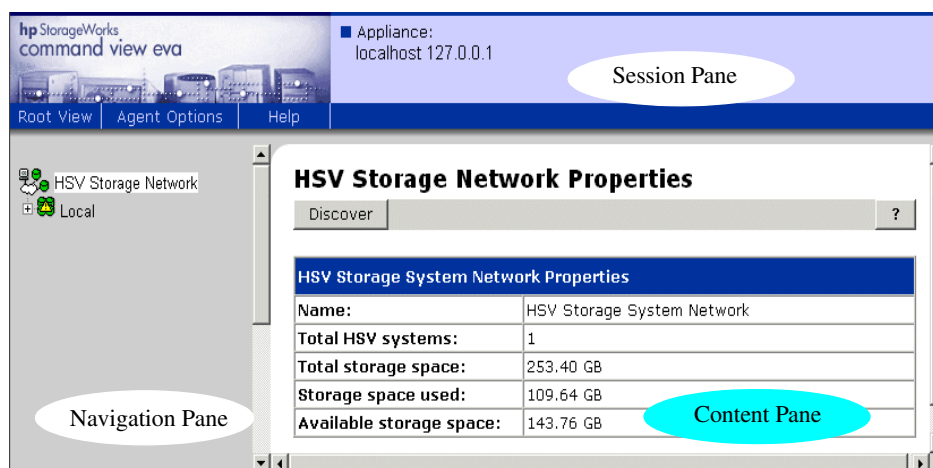


Figure 7: Command View EVA user interface

Session Pane

The **Session** pane (see [Figure 8](#)) displays the following information about the specific management agent that you are using:

- Software application name (Command View EVA)
- Name and IP address of the Storage Management Appliance or management server
- Buttons that control management agent operations:
 - **Root View**—displays the Command View EVA **Home** page
 - **Agent Options**—displays the **Management Agent Options** page (see [Figure 11](#)), which contains interface and agent options
 - **Help**—opens the Command View EVA online Help window



Figure 8: Command View EVA Session pane

Navigation Pane

The **Navigation** pane (see [Figure 9](#)) displays an expandable tree structure composed of folders that organize components representing the logical structure of the storage system. This structure enables you to configure and monitor elements of the storage system. These components are:

- Virtual disks
- Hosts
- Disk groups
- Data replication (not available or visible when running VCS v2.006)
- Hardware

Note: Multiple storage systems can be configured and controlled under the HSV storage network.

Figure 9 shows the Navigation pane.

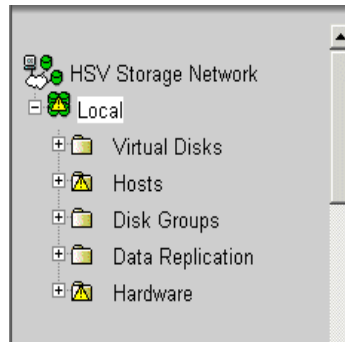


Figure 9: Command View EVA Navigation pane

Content Pane

The **Content** pane (see Figure 10) displays information related to the component you selected in the Navigation pane and presents actions that can be performed.

The **Page Help (?)** icon, located in the upper right corner of the **Content** pane, displays help for the current page and is an entry point into the entire help system.

Initialized Storage System Properties

Save changes	Set options	View events	Uninitialize	?
Code load	Shut down			

Identification		Condition/State	
Name:	1EVA3000	Operational state:	<input checked="" type="checkbox"/> Good (Initialized)
Node World Wide Name:	5000-1FE1-5000-CC20		
UUID:	6005-08b4-0001-54ef-0000-f000-022a-0000		
Licensed features		System	
Basic:	Yes	Type:	HSV100
Snapshot:	Yes	Version:	3010
Data replication:	Yes	Console LUN ID:	6
		Time:	29 Jun 2003 14:18:53
Policies		Capacity	
Device addition:	Manual	Total:	270.82 GB
Disk replacement delay:	1 mins	Used:	156.68 GB
		Available:	114.14 GB
Comments			
<input type="text"/>			

Figure 10: Command View EVA Content pane

Setting Command View EVA Options

Management agent options are settings that affect actions, attributes, and the appearance of Command View EVA.

To set management agent options:

1. Browse to the Command View EVA **Home** page (see [Figure 7](#)).
2. Click **Agent Options** on the **Session** pane toolbar.

The **Management Agent Options** page (see [Figure 11](#)) displays.

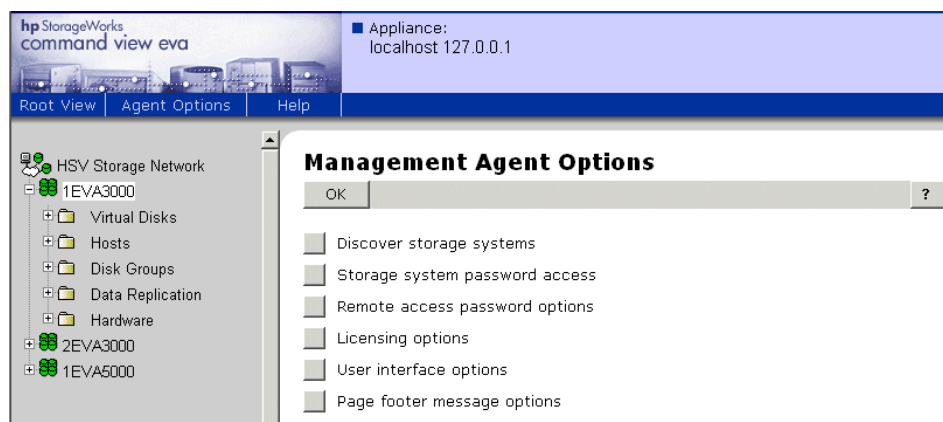


Figure 11: Management Agent Options page

Management Agent Options are summarized in [Table 2](#) and described in detail in following topics.

Table 2: Management Agent Options

Option	Description
Discover storage systems	Instructs the management agent to look for new storage systems on the fabric.
Storage system password access	Displays the Storage System Password Access page, which allows you to establish password control for storage system access. From this page, you can: <ul style="list-style-type: none"> ■ Enable password access to a storage system ■ Change a storage system password ■ Disable password access to storage systems
Remote access password options	Allows the user to view and manage access information so that applications on the appliance or management server can communicate with applications on remote systems.

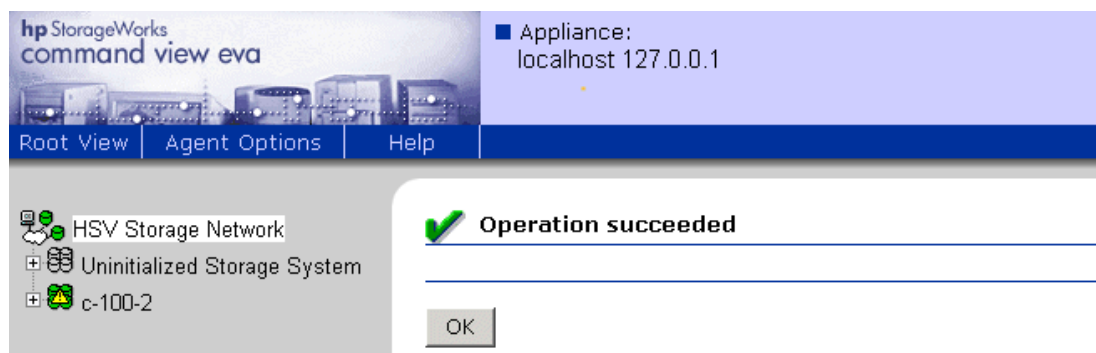
Table 2: Management Agent Options (Continued)

Option	Description
Licensing options	Displays the Licensing Options page. From this page, you can: View previously entered license keys and enter new license keys for EVA software such as Business Copy EVA
User interface options	Displays the User Interface Options page. This page allows you to specify browser display options. You can also specify the default operating system for new hosts.
Page footer message options	Displays the Set Page Footer Message page. This page provides the option to enter or edit a page footer message that displays at the bottom of the Content pane.

Discovering Storage Systems

The **Discover storage systems** option allows you to locate new storage systems on the SAN fabric.

1. Click **Discover storage systems** on the **Management Agent Options** page (see [Figure 11](#)). A status page displays additional details (see [Figure 12](#)).

**Figure 12: Discovery status display**

2. Click **OK**.

The updated **Navigation** pane displays any newly-discovered storage systems.

Establishing Storage System Password Protection

A password is a security feature that allows a management agent to access only specified storage systems.

A management agent can control multiple storage systems, and multiple management agents can control a single storage system, though only one agent can actively control a storage system at a time.

Password protection controls management agent access to storage systems. When multiple management agents reside on the same fabric, without password protection, any management agent on the fabric can access any storage systems on the fabric.

Storage system password protection is established by entering a password into the Operator Control Panel (OCP) of one of the controllers. To access a password-protected storage system, a management agent must match the password for the system. Refer to the *HP StorageWorks Enterprise Virtual Array User Guide* for more information.

Note: A password is a user-specified, 8-character code. Refer to the *HP StorageWorks Enterprise Virtual Array User Guide* for instructions on how to enter a password into an OCP. Password protection is optional, but is recommended for complex fabrics where more than one management agent resides. A system that is not password-protected can be accessed by any management agent on the fabric. If password protection is not desired for a specific storage system, DO NOT enter a password into the OCP of either controller.

To enable a management agent to access a storage system, perform the following steps:

1. Browse to the management agent.
2. Click **Agent Options** on the Command View EVA **Session** pane toolbar.

The **Management Agent Options** page (see [Figure 11](#)) displays.

3. Click **Storage system password access**.

The **Storage System Password Access** page displays (see [Figure 13](#)). From this page, you can enable or disable storage system password access or change a password. [Table 3](#) describes the options available.



Figure 13: Storage System Password Access page

Table 3: Storage System Password Access Options

Option	Description
Enable	Displays the Enable Password Access to a Storage System page, which allows you to add a specific storage system to the list of known storage systems on the management agent. Adding a new storage system allows the management agent to access the specified storage system.
Change	Displays the Change a Storage System Password page, which allows you to change the password after the storage system's password is changed (in the controller OCP). The password must be changed in Command View EVA to provide storage system access by the management agent.
Disable	Displays the Disable Password Access to a Storage System page, which is used to delete a storage system from the list of storage systems that can be accessed by the management agent.

Adding a Storage System to the Management Agent Access List

Adding a new storage system to the management agent access list allows the management agent to access that storage system.

1. Click **Agent Options** on the **Session** pane.
The **Management Agent Options** page displays (see [Figure 11](#)).
2. Click **Storage system password access**.
The **Storage System Password Access** page displays (see [Figure 13](#)).
3. Click **Enable**.
The **Enable Password Access to a Storage System** page displays (see [Figure 14](#)).



Figure 14: Enable Password Access to a Storage System page

4. Choose the storage system to be changed from the drop-down menu available from the **Storage System World Wide Node Name List** field.

Note: Only World Wide Names not previously selected are displayed.

5. Enter the system password, eight alphanumeric characters long, in the **Password** field. Enter the password again in the **Confirm Password** field.

Note: This password must match the one set in the OCP.

6. Click **Enable Password**. The **Enable password access** dialog box displays (see [Figure 15](#)).

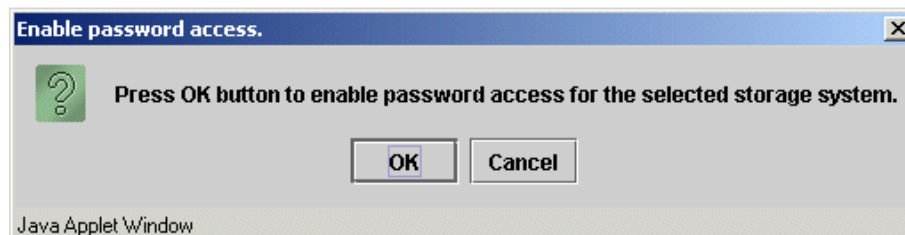


Figure 15: Enable password access dialog box

7. Click **OK** on the dialog box to enable password access. A status window displays (see [Figure 16](#)).

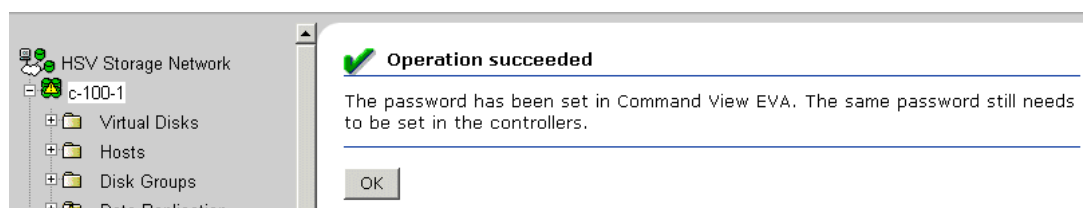


Figure 16: Enable password status display.

8. Click **OK** to return to the **Storage System Password Access** page.

Changing a Storage System Password

If a storage system password is changed (in the controller OCP), it must also be changed in Command View EVA to provide storage system access by the management agent.

1. Click **Agent Options** on the **Session** pane of the CV EVA **Home** page (see [Figure 7](#)).

The **Management Agent Options** page displays (see [Figure 11](#)).

2. Click **Storage system password access**.

The **Storage System Password Access** page displays (see [Figure 13](#)).

3. Click **Change**.

The **Change a Storage System Password** page displays (see [Figure 17](#)).



Figure 17: Change a Storage System Password page

4. Choose the storage system to be changed from the drop-down menu available from the **Storage System World Wide Node Name List** field.
5. Enter the new password, previously entered into the OCP of one of the storage system controllers, in the **Password** field, and enter it again in the **Confirm password** field.
6. Click **Change Password**. A **Change password** dialog box displays (see [Figure 18](#)).

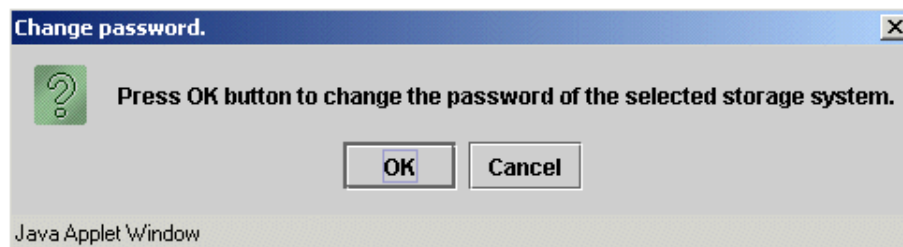


Figure 18: Change password dialog box

7. Click **OK**. A status message displays (see [Figure 19](#)).

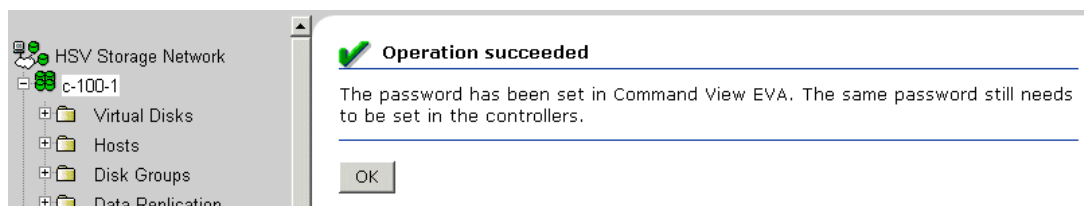


Figure 19: Action status message

8. Click **OK** to return to the **Storage System Password Access** page.

Disabling a Storage System From the Management Agent Access List

You can disable a storage system from the list of storage systems that a management agent can access.

1. Click **Agent Options** on the **Session** pane of the CV EVA **Home** page (see [Figure 7](#)).
The **Management Agent Options** page displays (see [Figure 11](#)).
2. Click **Storage system password access**.
The **Storage System Password Access** page displays (see [Figure 13](#)).
3. Click **Disable**.
The **Disable Password Access to Storage System** page displays (see [Figure 20](#)).



Figure 20: Disable Password Access to Storage System page

4. Choose a storage system to be deleted from drop-down menu available from the **Storage System World Wide Node Name List** field.

Note: Holding the **Shift** key down while clicking storage systems allows you to choose more than one storage system for deletion.

5. Click **Disable password** (see [Figure 20](#)). A **Disable password access** confirmation dialog box displays (see [Figure 21](#)).

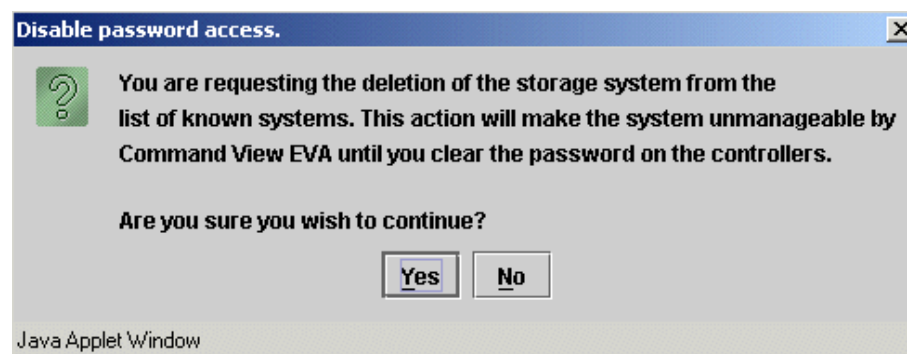


Figure 21: Disable password access confirmation dialog box

6. Click **Yes** to disable access to the selected storage system.
A status page displays (see [Figure 22](#)).

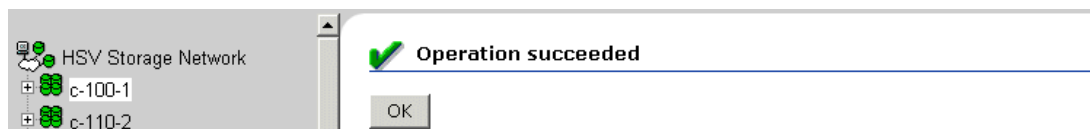


Figure 22: Disable action status display

- Click **OK** to return to the **Storage System Password Access** page.

Using Remote Access Password Options

The Remote Access Password Options function permits the user to view and manage access information so applications on the Storage Management Appliance or management server can communicate with applications on a remote system.

To enter or change a remote access password, use the following procedure:

- Browse to the Command View EVA **Home** page (see [Figure 7](#)).
- Click the **Agent Options** button on the **Session** pane toolbar. The **Management Agent Options** page displays (see [Figure 11](#)).
- Click the **Remote access password options** box on the **Content** pane. The storage management appliance **Account Login** page displays (see [Figure 23](#)).

Login Account: administrator 127.0.0.1
[Refresh Page](#) [Logout](#) Tuesday, August 26, 2003 10:45:05 AM

Account Login

This is a private system. Do not attempt to login unless you are an authorized user. Any authorized or unauthorized access and use may be monitored and can result in criminal or civil prosecution under applicable law.

You are being prompted to provide login account information for **SMAD111DD22P333**.

Please provide the information requested and press the **OK** button to complete the login process.

A successful login will bring up the original system management information requested ([cpqllogin.htm](#)), or the Device Home Page if this login was manually initiated. The Password for a login account may be changed at any time by an Account Administrator.

User:

Password:

Figure 23: Account Login display

- Enter your username and password in the appropriate fields and click **OK**. The **System Management Homepage** for the appliance displays (see [Figure 24](#)).

hp **System Management Homepage for SMAD111DD22P333.**

System Model: **hp OpenView storage management appliance**
 System Status: **Failed**
 Current User: **administrator** [logout](#)

[Home](#) [Settings](#) [Tasks](#) [Logs](#) [Agent Help](#)

[about this page](#) Tuesday, August 26, 2003 11:13:16 AM
[refresh](#): manual

Integrated Agents
[Insight Management Agents](#)

Other Agents
[hp OpenView Storage Management Appliance](#)

Failed & Degraded Items

☒ [Home -> Recovery -> Power Supply](#)

Figure 24: System Management Homepage display

5. Select the **Settings** tab. Another **System Management Homepage** displays (see [Figure 25](#)).

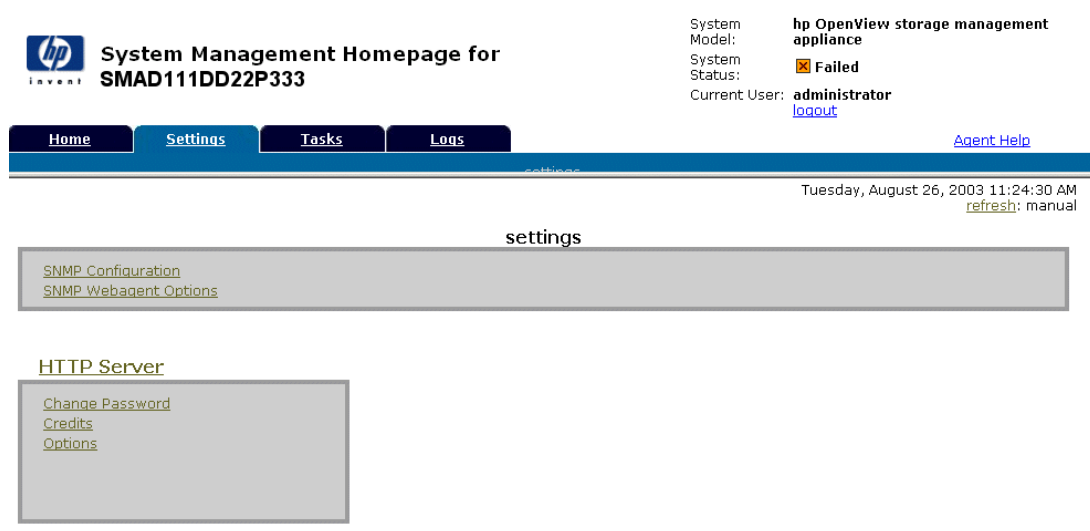


Figure 25: Settings tab

6. From the **HTTP Server** box, select **Change Password**. The Change HTTP Server Password screen appears (see [Figure 26](#)).

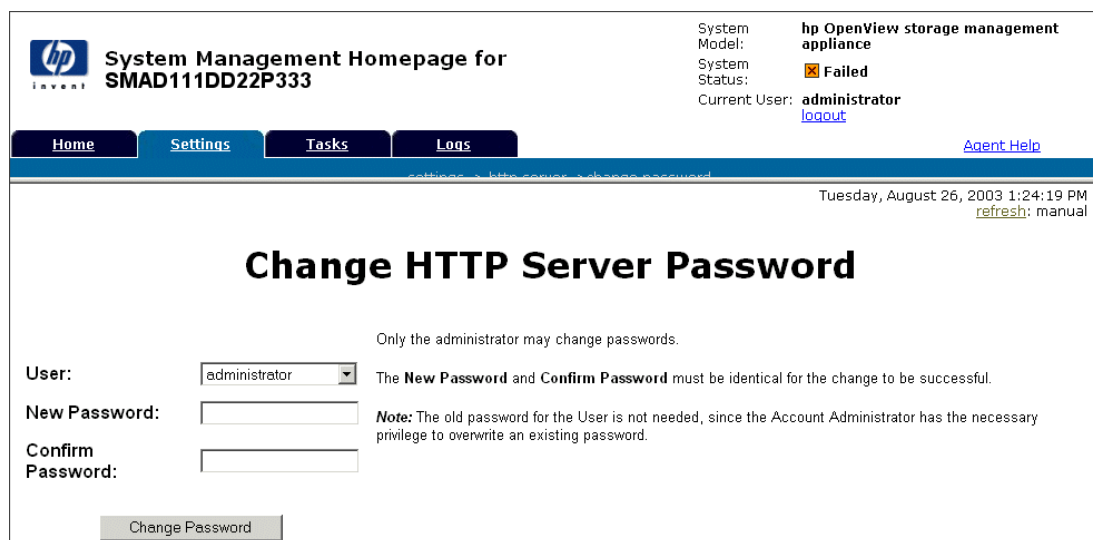


Figure 26: Change HTTP Server Password display

7. Enter your username and the new password in the **User:** and **New Password:** fields. Enter the new password again in the **Confirm Password:** field.
8. Click **Change Password**. A status screen displays (see [Figure 27](#)).

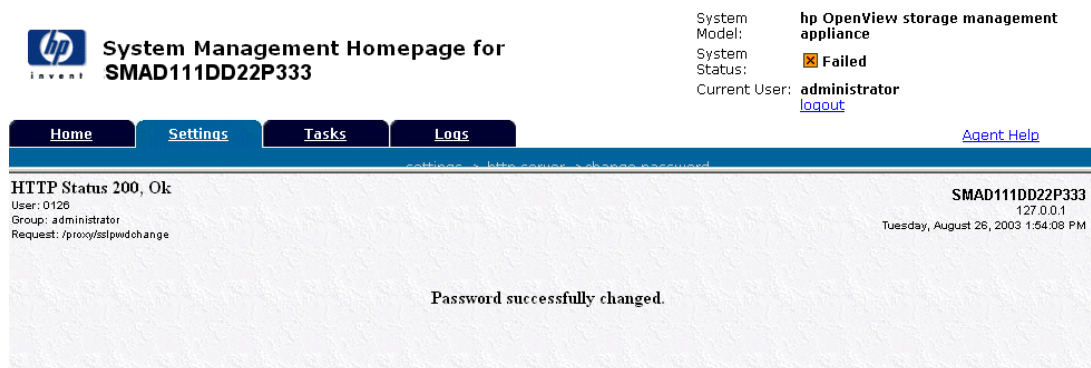


Figure 27: Change HTTP Password status display

Licensing

A basic license key is no longer required for activation of the VCS firmware. However, the Command View EVA **Licensed features** field of the **Initialized Storage System Properties** window still contains a basic license entry, which always reflects **Yes** (see [Figure 10](#)). Command View EVA is now licensed as part of the HP OpenView Storage Operations Manager product. It is a paper license, which does not require retrieval of a license key from the HP license retrieval Website.

Refer to the *HP OpenView Storage Area Manager Installation Guide* for information about licenses for Storage Node Manager and other Storage Area Manager modules.

License Keys

License keys are required for the Enterprise Virtual Array storage system to operate with snapshot and data replication capabilities. A **Business Copy EVA** license key activates snapshot and Business Copy EVA functionality. A **Continuous Access EVA** license key activates data replication functionality. These licenses are sold as part of the individual product software kits. [Table 4](#) describes these licenses.

Table 4: License Key Types

License Key Type	Description
Business Copy EVA	Needed to unlock the snapshot and snapclone features, if purchased. The Business Copy EVA license can be added any time before or after the system is initialized.
Continuous Access EVA	Provides data replication functionality on the EVA. The Continuous Access EVA license can be added any time before or after the system is initialized.

Accessing Licensing Options

Management agent licensing options include:

- Viewing existing license keys
- Adding license keys

Click **Agent Options > Licensing options** to display the **Licensing Options** page (see [Figure 28](#)). [Table 5](#) describes the licensing options available from the **Licensing Options** page.

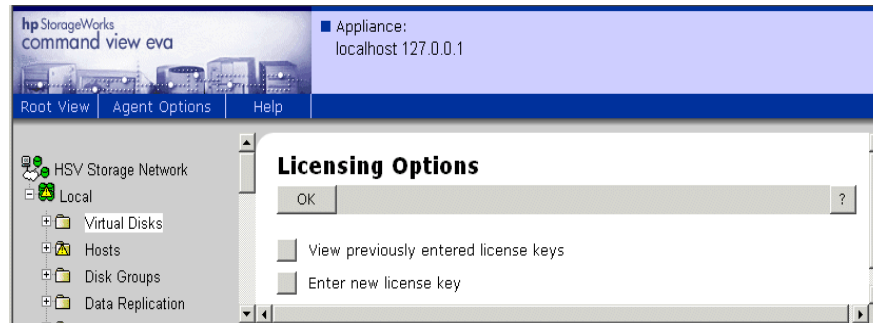


Figure 28: Licensing Options page

Table 5: Licensing Options and Descriptions

Options	Description
View previously entered license keys	Allows you to view a list of all license keys previously entered.
Enter new license key	Allows you to enter new license keys.

Viewing License Keys

You can view all license keys known to the current management agent. This can include license keys entered through other management agents that previously managed the same storage systems.

To view existing license keys:

1. Click **Agent Options** on the **Session** pane of the CV EVA **Home** page (see [Figure 7](#)).
The **Management Agent Options** page displays (see [Figure 11](#)).
2. Click **Licensing options**.
The **Licensing Options** page displays (see [Figure 28](#)).
3. Click **View previously entered license keys**.
The **View License Keys** page displays (see [Figure 29](#)).

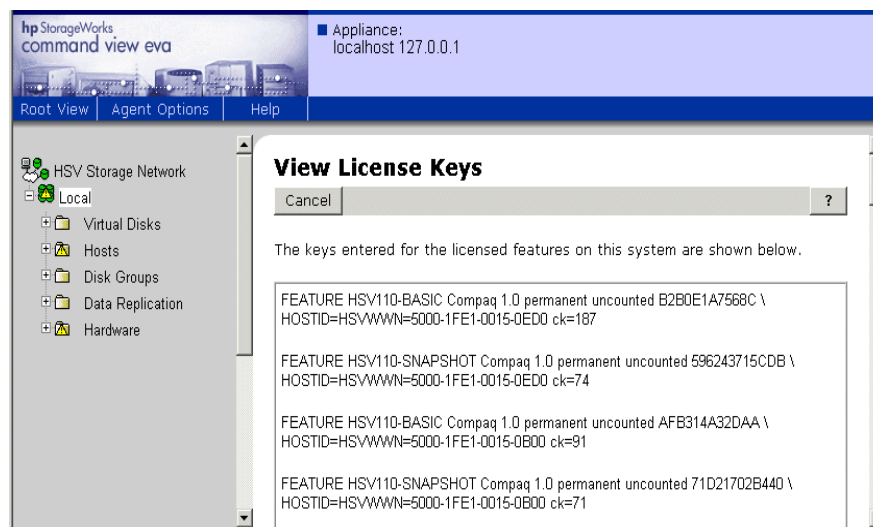


Figure 29: View License Keys page

- Click **Cancel** to return to the **Licensing Options** page.

Adding a License Key

You can enter license keys as needed.

Note: You can enter license keys at the same time for all the storage systems that a management agent will control, although you can obtain only ten license keys from the Website at one time.

To enter a license key:

- Click **Agent Options** on the **Session** pane of the CV EVA **Home** page (see [Figure 7](#)).
The **Management Agent Options** page displays (see [Figure 11](#)).
- Click **Licensing options**.
The **Licensing Options** page displays (see [Figure 28](#)).

Note: To avoid text entry errors, HP recommends that you copy and paste license keys from an e-mail message or online source. Avoid manual entry if possible or ensure it is absolutely correct. License keys require an ASCII text editor to ensure their correct format.

- Click **Enter new license key**.

The **Add a license** page displays (see [Figure 30](#)).

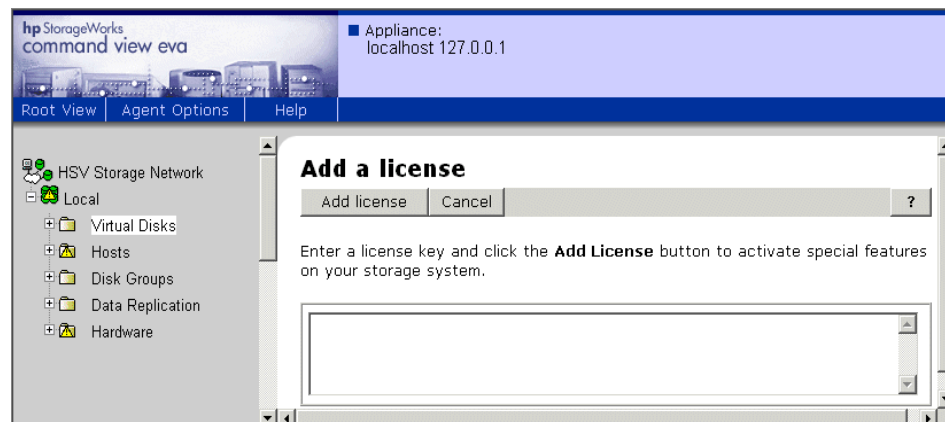


Figure 30: Add a license page

- Copy the license key from your e-mail message or online source.



Caution: The e-mail message from the License Key Retrieval Website contains the following statement: "This message in its entirety may be placed into your license file." *Do not* copy the entire text when entering the license key. If the message is entered in its entirety, it will be rejected by Command View EVA.

- Paste the license key in the dialog box.
- Click **Add license** to save the information.

Note: Repeat the process for each additional license key.

Setting User Interface Options

User interface options allow you to set user interface display characteristics (see [Table 6](#)).

To set user interface options:

1. Click **Agent Options** on the **Session** pane of the CV EVA **Home** page (see [Figure 7](#)). The **Management Agent Options** page displays (see [Figure 11](#)).
2. Click **User interface options**. The **User Interface Options** page displays (see [Figure 31](#)), which allows you to specify browser display options.

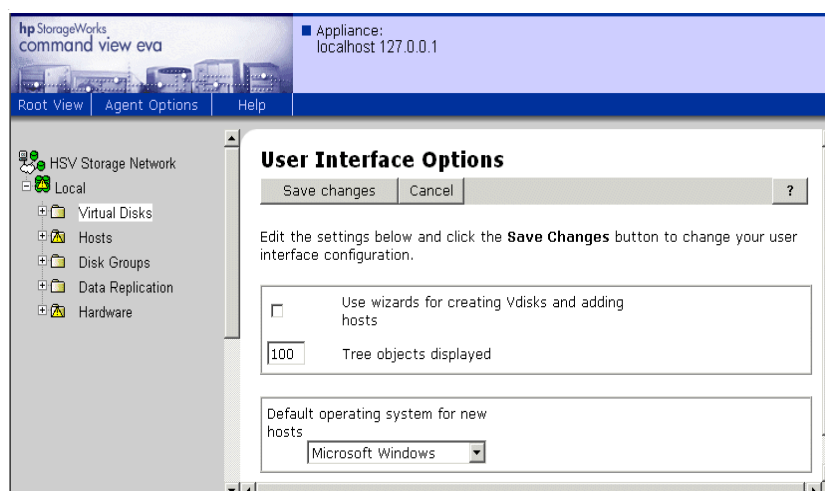


Figure 31: User Interface Options page

3. Edit or select desired settings.
4. Click **Save changes**.

Table 6: User Interface Options

Option	Description
Use wizards for creating Vdisks and hosts	Selected—tasks for virtual disk and host creation are presented on a series of pages. Not selected—tasks for virtual disk and host creation are presented on one page.
Tree objects displayed	Determines the maximum number of objects that can be displayed in the Navigation pane. Only numeric characters are valid for this field.
Default operating system for new hosts	Allows you to select a default operating system for your host from those listed in the drop-down menu. The selected operating system is set as the default while adding a new host.

Setting Page Footer Message Options

Page Footer Message Options allow you to enter or edit a text message at the bottom of each **Content** pane. The message can be a security message or can contain other information of interest. The maximum length is 64 characters and text entered displays in red.

To set a page footer message:

1. Click **Agent Options** on the **Session** pane of the CV EVA **Home** page (see [Figure 7](#)).
The **Management Agent Options** page displays (see [Figure 11](#)).
2. Click **Page footer message options**.
The **Set Page Footer Message** page displays (see [Figure 32](#)).

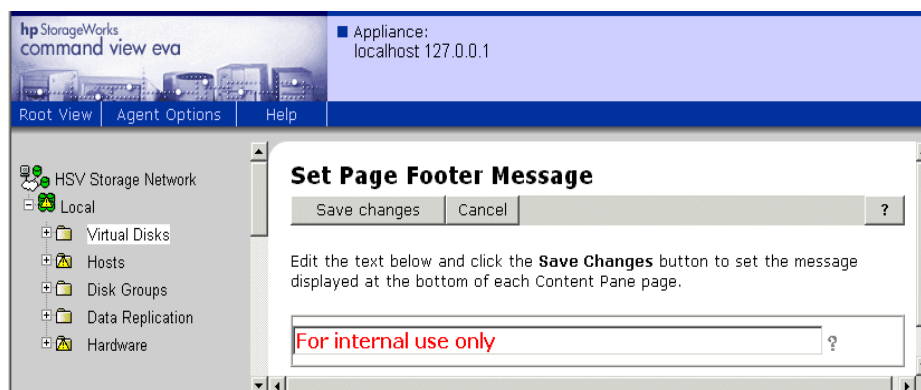


Figure 32: Set Page Footer Message page

3. Enter text or edit the existing message in the text box.
4. Click **Save changes**.
The new message displays in red text at the bottom of the **Content** pane.

Initializing the Storage System

Initializing the storage system makes it ready for use, binds the controllers together as an operational pair, and establishes preliminary data structures on the disk array. Initializing also sets up the first disk group, which is called the default disk group. A disk group is the set of physical disk drives from which virtual disks can be created.

To initialize a storage system:

1. Click the uninitialized storage system's icon in the **Navigation** pane. The **Uninitialized HSV Storage System Properties** page displays (see [Figure 33](#)).

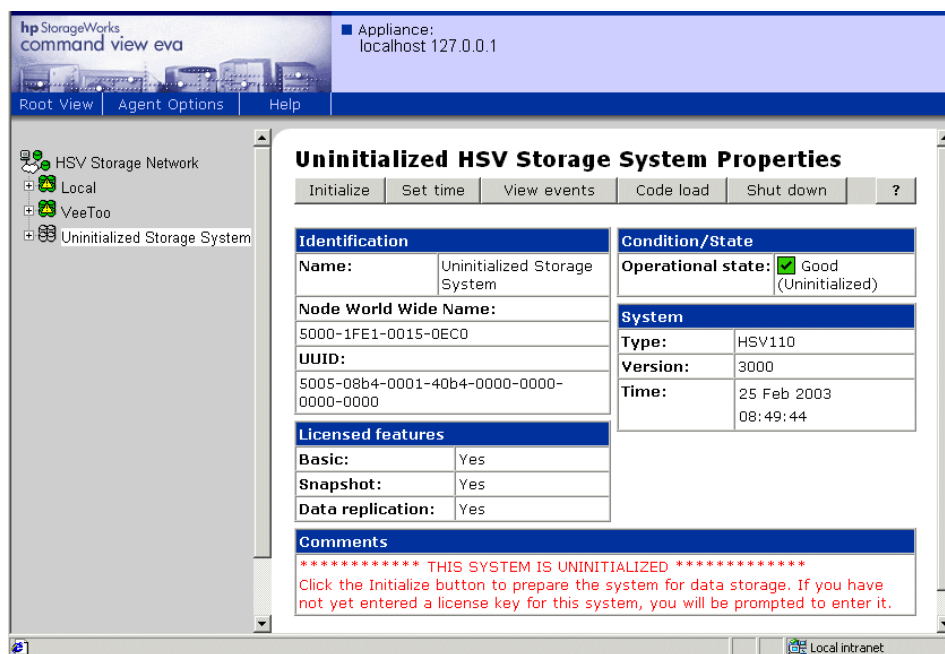


Figure 33: Uninitialized HSV Storage System Properties page

2. Click **Initialize**.

A confirmation pop-up displays indicating that if you initialize the system, any existing data on the disk drives you use will be lost.

3. Click **OK** on the confirmation screen.

Page 1 (Steps 1 and 2) of the **Initialize an HSV Storage System** pages displays (see [Figure 34](#)).

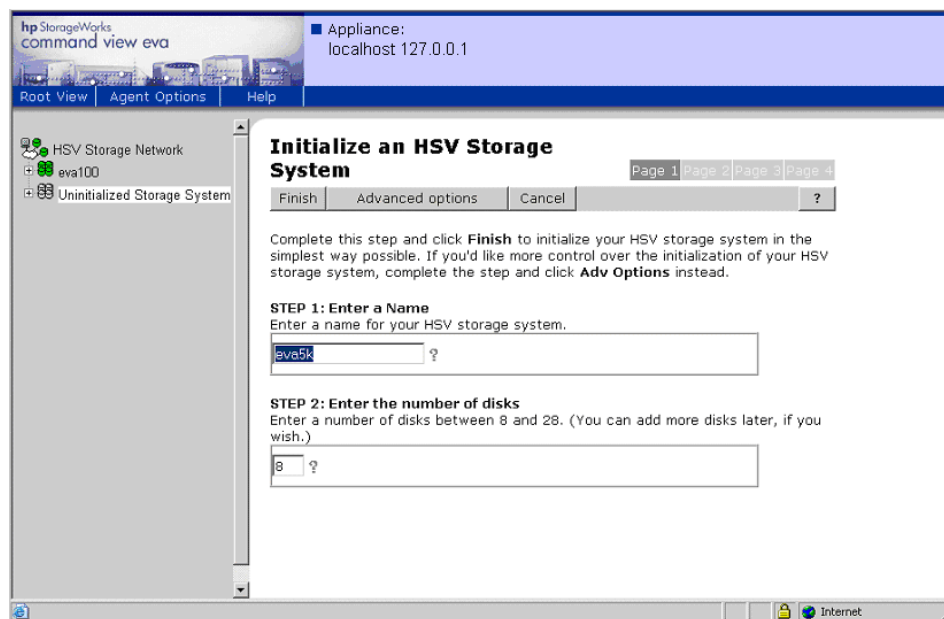


Figure 34: Page 1 of the Initialize an HSV Storage System pages

4. Enter a name for the HSV storage system in **Step 1**.
5. Specify the number of disks in the default disk group in **Step 2**.
6. If you want to exercise the advanced options (setting time source, setting disk failure protection level, selecting drive type, etc.) click **Advanced Options**, otherwise, click **Finish**.

Note: To initialize a storage system using a near-online drive type, you must use Advanced Options.

Advanced Options are discussed in “Using Storage System Initialization Advanced Options” on page 43.

Using Storage System Initialization Advanced Options

The following advanced options are available for controlling the storage system characteristics:

- Set system date/time
- Set console LUN ID
- Set drive type
- Set disk failure protection level
- Enter comments

To set up advanced options, complete the following steps:

1. From the **Initialize an HSV Storage System** page, click **Advanced Options** (see [Figure 34](#)).

Page 2 (Steps 3 and 4) of the **Initialize an HSV Storage System** pages displays (see [Figure 35](#)).

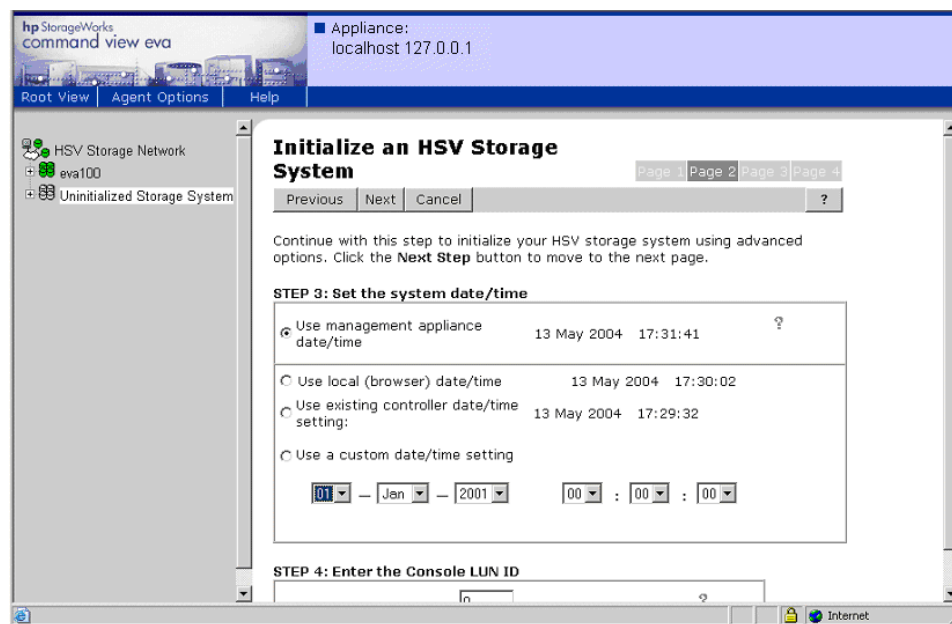


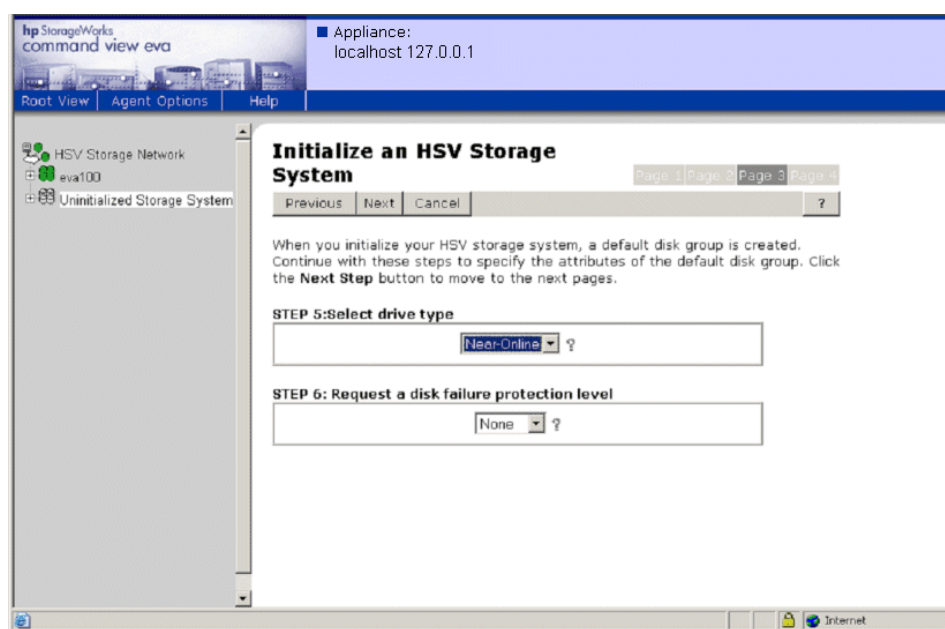
Figure 35: Page 2 of the Initialize an HSV Storage System pages

2. Choose one of the four options available for setting storage system date and time shown in [Table 7](#).

Table 7: Page 2 of the Initialize an HSV Storage System Descriptions

Options	Description
Use management appliance system date/time	Sets the storage system date and time to the appliance or management server settings.
Use local (browser) date/time	Sets the storage system date and time to the settings on the local browser. This feature is suppressed in the Netscape™ browser on UNIX® platforms. To set the date and time, use the custom date and time setting option.
Use existing controller date/time setting	Sets the storage system date and time to the settings on the existing controller pair's real-time clock.
Use a custom date/time setting	Sets the storage system date and time to the time you enter in the boxes. A custom time is useful for measuring elapsed time. For example, you can set the time to all zeroes at some starting point in order to time an event relative to the starting point.

3. Enter a console LUN ID appropriate to your operating system.
4. Click **Next**. Page 3 (Steps 5 and 6) of the **Initialize an HSV Storage System** pages displays (see [Figure 36](#)).

**Figure 36: Page 3 of the Initialize an HSV Storage System pages**

5. Select the drive type from the drop-down menu (see [Figure 37](#))

Note: A minimum of 8 drives of the same type are required to create a storage system.

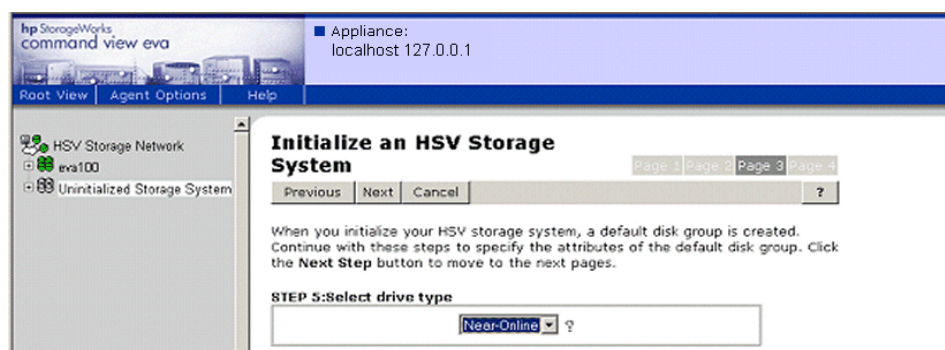


Figure 37: Drive type

Table 8 describes the drive types.

Table 8: Drive type Description

Drive Type	Description
Online	An online drive is a normal high-performance, highly accessed drive.
Near-Online	A near-online drive is a lower-performance, less frequently accessed drive.

6. Select the disk protection level from the drop-down menu (see Figure 38).

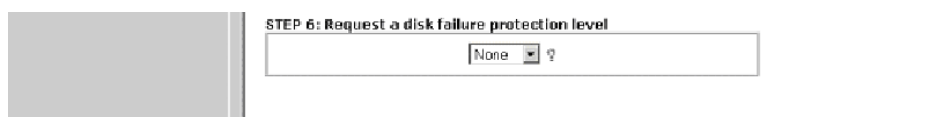


Figure 38: Disk failure protection level

Table 9 describes the disk failure protection levels.

Table 9: Disk Failure Protection Level Descriptions

Level	Description
None	No protection is present. The disk group cannot tolerate the loss of any physical disks and maintain its data protection (redundancy).
Single	The disk group can tolerate the loss of one physical disk drive and maintain its data protection (redundancy).
Double	The disk group can tolerate the loss of two physical disk drives and maintain its data protection (redundancy).

7. Click **Next** to continue to Page 4 (Steps 7 and 8) of the **Initialize an HSV Storage System** pages (see Figure 39).

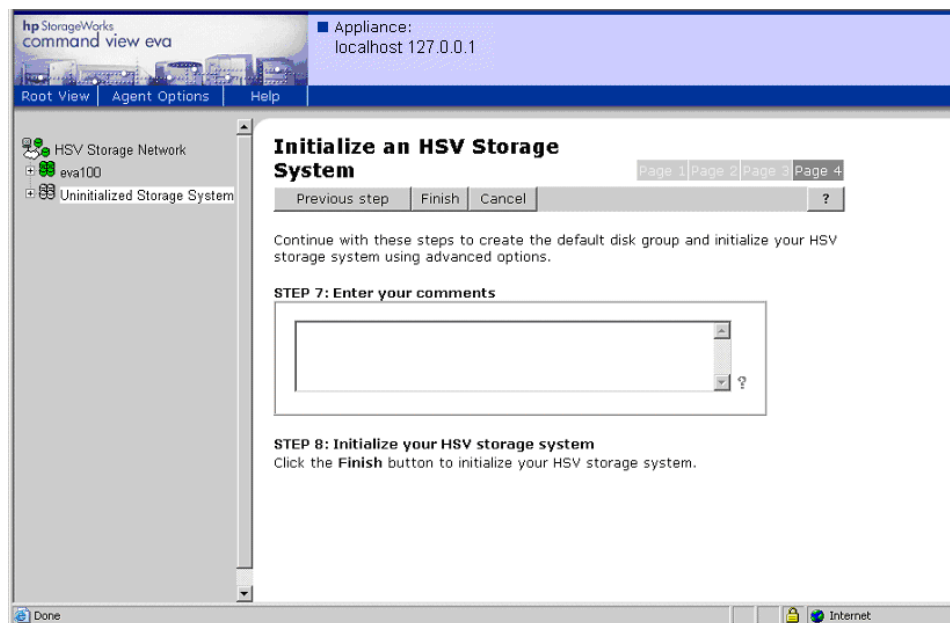


Figure 39: Page 4 of the Initialize an HSV Storage System pages

8. If desired, enter informational text regarding the initialization. The comments field can contain up to 128 characters. The following characters *cannot* be used in the comment field: ?, “, <, >, +, &, \, /, :, *, |, and %.
9. Click **Finish** to begin initialization.

A pop-up window displays verifying selected size and protection level.

After completing initialization, a status screen displays and indicates that the initialization was successful.

Using Online Help

3

Command View EVA interactive online help is provided to assist you in setting up and managing Command View EVA. Detailed procedures are also provided for configuring and monitoring your Enterprise storage system. The online help explains all elements of each Command View EVA page displayed by the browser, as well as detailed procedures to accomplish all tasks you will perform with Command View EVA.

This chapter contains information and instructions on the following:

- [Accessing Online Help](#), page 48
- [Application Help](#), page 49
- [Page Level Help](#), page 50
- [Field Level Help](#), page 50
- [Finding Information](#), page 51

Accessing Online Help

You can access application help and page level help from each Command View EVA page. To access online help:

- Application help—click **Help** on the toolbar in the Command View EVA **Session** pane (see [Figure 40](#)).



Figure 40: Command View EVA toolbar

Click the appropriate button in the online help **Session** pane. Your choices are **Home**, **Agent**, **V2**, **V3**, **About**, and **Close** (see [Figure 41](#)).



Figure 41: Command View EVA Help modules

Note: Before you choose the V2 or V3 help module, you need to know which VCS version you are using. Determine the version number by clicking the **About** button. Version information is included in the resulting display.

- Page level help—click **?** on the toolbar in the **Content** pane on a Command View EVA page (see [Figure 42](#)) or click **Page Level Help** in the V2 or V3 help module **Contents** tab (see [Figure 43](#)).

Note: When you select V2 or V3, a display will offer two options: HSV100 or HSV110. For the EVA5000 storage system, select HSV110.

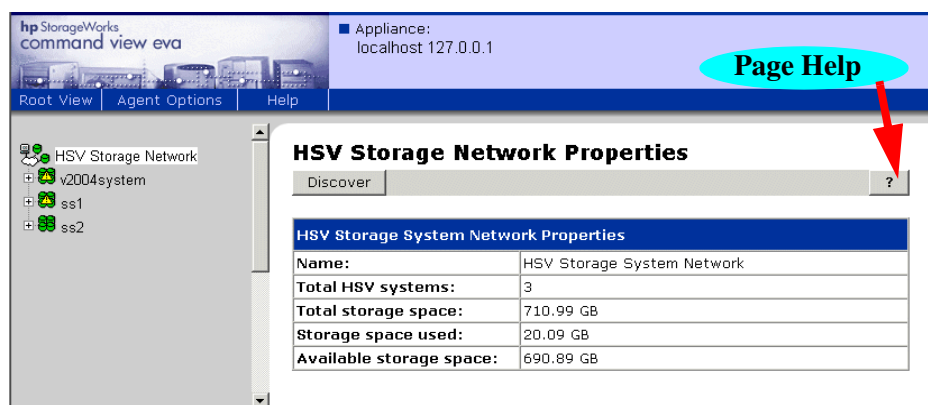


Figure 42: Command View EVA Page Help icon

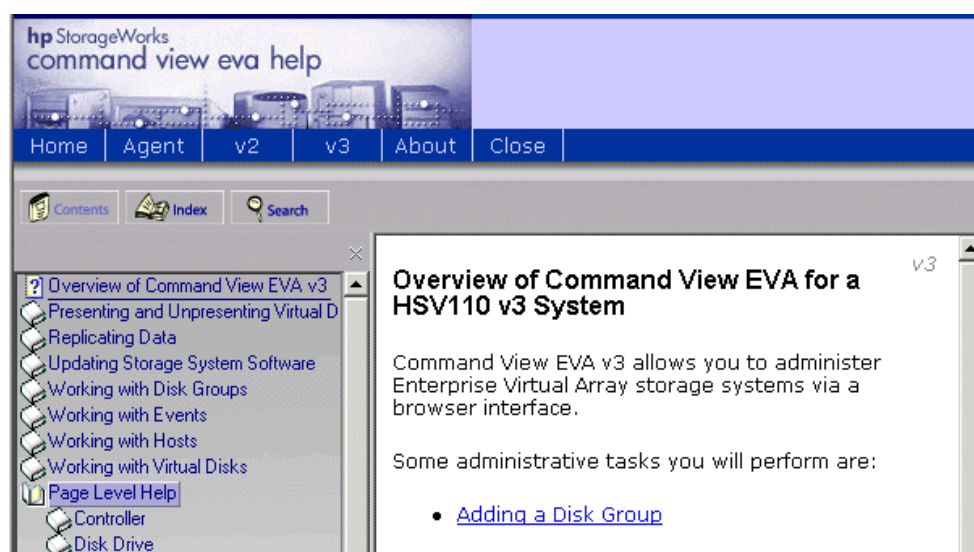


Figure 43: Page Level Help from V3 Contents tab

Application Help

Application help provides information that enables you to perform tasks to configure and monitor Command View EVA. Application help is divided into the following modules:

- Home—description of the help system, Command View EVA GUI, and Enterprise Storage System. It also provides an overview of Command View EVA.
- Agent—description of the management agent and browser options available by clicking **Agent Options** in the Command View EVA **Session** pane.
- V2—online help system for CV EVA Version 2.00x.
- V3—online help system for CV EVA Version 3.0x.
- About—provides product version and software build information.
- Close—exits Help.

Each module (see [Figure 40](#)) is a complete reference and provides detailed, step-by-step information to assist you in setting up, configuring, and monitoring your storage system.

The Agent, V2, and V3 modules contain a Contents, Index, and Search functionality accessed by the tabs in the **Navigation** pane (see [Figure 44](#)).



Figure 44: Command View EVA Help module tabs

Page Level Help

Click **?** on the toolbar at the top of the **Content** pane of a Command View EVA page to display page level help for that page. Page level help explains the purpose of an individual Command View EVA page and defines characteristics, button functionality, and fields.

Click **Page Level Help** in the **Content** pane Table of Contents to access the complete page level help package for V2 and V3 online help modules.

Field Level Help

You can also display the following types of field level help from a Page Level Help page:

- **Pop up**—text highlighted in blue and underlined. Click to display a pop-up window with information related to highlighted text.
- **Link**—text highlighted in blue and underlined. Click to link to information related to the highlighted text.
- **Related Topics**—click the **Related Topics** button located below text in the **Content** pane to display a list of related help topics. Click a listed topic.

Finding Information

You can find information in the help modules by using the Contents, Index, and Search functions.

■ Contents

1. Click **Help** on the toolbar on the Command View EVA **Session** pane (see [Figure 40](#)).
2. Click the appropriate tab to display the help module.
3. Expand the books in the **Contents** tab by clicking the book and selecting the desired topic under the book. Information related to the selected topic displays in the **Content** pane.

■ Index

1. Click **Help** on the toolbar on the Command View EVA **Session** pane (see [Figure 40](#)).
2. Click the appropriate tab to display the help module.
3. Click the **Index** tab (see [Figure 44](#)).
4. Scroll through the Index to find the desired item or type in a keyword in the field provided.
5. Click the desired item in the **Navigation** pane to display related information in the **Content** pane. If more than one topic is available for the item selected, topics are displayed from which you can choose.

■ Search

1. Click **Help** on the toolbar on the Command View EVA **Session** pane (see [Figure 40](#)).
2. Click the appropriate tab to display the help module.
3. Type the item you are searching for in the field provided, then click **Find**.

Topics related to the item display in the **Navigation** pane. Click an item in the list to display related information in the **Content** pane.

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